Exploring Aeronautics			
2000 Science			
Academic Standards			
Indiana Science			
Grade 5			
Activity/Lesson	**State**	**Standards**	
Fundamentals of Aeronautics (145-176)	IN	SCI.5.5.3.11	Investigate and describe that changes in speed or direction of motion of an object are caused by forces. Understand that the greater the force, the greater the change in motion and the more massive an object, the less effect a given force will have.
Airplane Control(209-256)	IN	SCI.5.5.3.11	Investigate and describe that changes in speed or direction of motion of an object are caused by forces. Understand that the greater the force, the greater the change in motion and the more massive an object, the less effect a given force will have.
How an Airplane Flies	IN	SCI.5.5.3.11	Investigate and describe that changes in speed or direction of motion of an object are caused by forces. Understand that the greater the force, the greater the change in motion and the more massive an object, the less effect a given force will have.
Science of Flight	IN	SCI.5.5.3.11	Investigate and describe that changes in speed or direction of motion of an object are caused by forces. Understand that the greater the force, the greater the change in motion and the more massive an object, the less effect a given force will have.
Science of Flight	IN	SCI.5.5.5.8	Realize and explain that predictions may be more accurate if they are based on large collections of objects or events.
Science of Flight	IN	SCI.5.5.5.10	Explain the danger in using only a portion of the data collected to describe the whole.
Integrating with Aeronautics	IN	SCI.5.5.3.11	Investigate and describe that changes in speed or direction of motion of an object are caused by forces. Understand that the greater the force, the greater the change in motion and the more massive an object, the less effect a given force will have.
Scientific Method(124-144)	IN	SCI.5.5.5.8	Realize and explain that predictions may be more accurate if they are based on large collections of objects or events.
Scientific Method(124-144)	IN	SCI.5.5.5.10	Explain the danger in using only a portion of the data collected to describe the whole.
Exploring Aeronautics			
2000 Science			
Academic Standards			
Indiana Science			
Grade 6			
Activity/Lesson	**State**	**Standards**	

Fundamentals of Aeronautics (145-176)	IN	SCI.6.6.2.5	Organize information in simple tables and graphs and identify relationships they reveal. Use tables and graphs as examples of evidence for explanations when writing essays or writing about lab work, fieldwork, etc.
Fundamentals of Aeronautics (145-176)	IN	SCI.6.6.2.6	Read simple tables and graphs produced by others and describe in words what they show.
Tools of Aeronautics(257-326)	IN	SCI.6.6.1.6	Explain that computers have become invaluable in science because they speed up and extend people's ability to collect, store, compile, and analyze data; prepare research reports; and share data and ideas with investigators all over the world.
Tools of Aeronautics(257-326)	IN	SCI.6.6.2.2	Use technology, such as calculators or computer spreadsheets, in analysis of data.
The Tools of Aeronautics	IN	SCI.6.6.1.6	Explain that computers have become invaluable in science because they speed up and extend people's ability to collect, store, compile, and analyze data; prepare research reports; and share data and ideas with investigators all over the world.
The Tools of Aeronautics	IN	SCI.6.6.2.2	Use technology, such as calculators or computer spreadsheets, in analysis of data.
Science of Flight	IN	SCI.6.6.1.3	Recognize and explain that hypotheses are valuable, even if they turn out not to be true, if they lead to fruitful investigations.
Science of Flight	IN	SCI.6.6.2.2	Use technology, such as calculators or computer spreadsheets, in analysis of data.
Science of Flight	IN	SCI.6.6.2.7	Locate information in reference books, back issues of newspapers and magazines, compact disks, and computer databases.
Integrating with Aeronautics	IN	SCI.6.6.2.5	Organize information in simple tables and graphs and identify relationships they reveal. Use tables and graphs as examples of evidence for explanations when writing essays or writing about lab work, fieldwork, etc.
Scientific Method(124-144)	IN	SCI.6.6.1.3	Recognize and explain that hypotheses are valuable, even if they turn out not to be true, if they lead to fruitful investigations.
Scientific Method(124-144)	IN	SCI.6.6.1.7	Explain that technology is essential to science for such purposes as access to outer space and other remote locations, sample collection and treatment, measurement, data collection and storage, computation, and communication of information.
Scientific Method(124-144)	IN	SCI.6.6.2.2	Use technology, such as calculators or computer spreadsheets, in analysis of data.
Exploring Aeronautics			
2000 Science			
Academic Standards			
Indiana Science			

Grade 7			
Activity/Lesson	**State**	**Standards**	
Fundamentals of Aeronautics (145-176)	IN	SCI.7.7.3.17	Investigate that an unbalanced force, acting on an object, changes its speed or path of motion or both, and know that if the force always acts toward the same center as the object moves, the object's path may curve into an orbit around the center.
Tools of Aeronautics(257-326)	IN	SCI.7.7.1.7	Explain how engineers, architects, and others who engage in design and technology use scientific knowledge to solve practical problems.
Tools of Aeronautics(257-326)	IN	SCI.7.7.7.2	Use different models to represent the same thing, noting that the kind of model and its complexity should depend on its purpose.
How an Airplane Flies	IN	SCI.7.7.3.17	Investigate that an unbalanced force, acting on an object, changes its speed or path of motion or both, and know that if the force always acts toward the same center as the object moves, the object's path may curve into an orbit around the center.
The Tools of Aeronautics	IN	SCI.7.7.1.7	Explain how engineers, architects, and others who engage in design and technology use scientific knowledge to solve practical problems.
The Tools of Aeronautics	IN	SCI.7.7.7.2	Use different models to represent the same thing, noting that the kind of model and its complexity should depend on its purpose.
Science of Flight	IN	SCI.7.7.1.2	Explain that what people expect to observe often affects what they actually do observe and provide an example of a solution to this problem.
Science of Flight	IN	SCI.7.7.1.7	Explain how engineers, architects, and others who engage in design and technology use scientific knowledge to solve practical problems.
Science of Flight	IN	SCI.7.7.1.9	Explain how societies influence what types of technology are developed and used in fields such as agriculture, manufacturing, sanitation, medicine, warfare, transportation, information processing, and communication.
Science of Flight	IN	SCI.7.7.1.10	Identify ways that technology has strongly influenced the course of history and continues to do so.
Integrating with Aeronautics	IN	SCI.7.7.1.10	Identify ways that technology has strongly influenced the course of history and continues to do so.
Intro to Aeronautics (109-123)	IN	SCI.7.7.1.7	Explain how engineers, architects, and others who engage in design and technology use scientific knowledge to solve practical problems.

Intro to Aeronautics (109-123)	IN	SCI.7.7.1.10	Identify ways that technology has strongly influenced the course of history and continues to do so.
Intro to Aeronautics (109-123)	IN	SCI.7.7.3.17	Investigate that an unbalanced force, acting on an object, changes its speed or path of motion or both, and know that if the force always acts toward the same center as the object moves, the object's path may curve into an orbit around the center.
Scientific Method(124-144)	IN	SCI.7.7.1.7	Explain how engineers, architects, and others who engage in design and technology use scientific knowledge to solve practical problems.
Scientific Method(124-144)	IN	SCI.7.7.2.8	Question claims based on vague attributes, such as "Leading doctors say...," or on statements made by celebrities or others outside the area of their particular expertise.
Exploring Aeronautics			
2000 Science			
Academic Standards			
Indiana Science			
Grade 8			
Activity/Lesson	**State**	**Standards**	
Tools of Aeronautics(257-326)	IN	SCI.8.8.1.6	Identify the constraints that must be taken into account as a new design is developed, such as gravity and the properties of the materials to be used.
Tools of Aeronautics(257-326)	IN	SCI.8.8.2.4	Use technological devices, such as calculators and computers, to perform calculations.
Tools of Aeronautics(257-326)	IN	SCI.8.8.2.5	Use computers to store and retrieve information in topical, alphabetical, numerical, and keyword files and create simple files of students' own devising.
The Tools of Aeronautics	IN	SCI.8.8.1.6	Identify the constraints that must be taken into account as a new design is developed, such as gravity and the properties of the materials to be used.
The Tools of Aeronautics	IN	SCI.8.8.2.4	Use technological devices, such as calculators and computers, to perform calculations.
The Tools of Aeronautics	IN	SCI.8.8.7.3	Use technology to assist in graphing and with simulations that compute and display results of changing factors in models.
Science of Flight	IN	SCI.8.8.1.1	Recognize that and describe how scientific knowledge is subject to modification as new information challenges prevailing theories and as a new theory leads to looking at old observations in a new way.
Science of Flight	IN	SCI.8.8.1.3	Recognize and describe that if more than one variable changes at the same time in an experiment, the outcome of the experiment may not be attributable to any one of the variables.

Integrating with Aeronautics	IN	SCI.8.8.2.8	Use tables, charts, and graphs in making arguments and claims in, for example, oral and written presentations about lab or fieldwork.
Integrating with Aeronautics	IN	SCI.8.8.5.1	Understand and explain that a number must be written with an appropriate number of significant figures (determined by the measurements from which the number is derived).
Scientific Method(124-144)	IN	SCI.8.8.1.6	Identify the constraints that must be taken into account as a new design is developed, such as gravity and the properties of the materials to be used.
Scientific Method(124-144)	IN	SCI.8.8.2.10	Identify and criticize the reasoning in arguments in which fact and opinion are intermingled or the conclusions do not follow logically from the evidence given, an analogy is not apt, no mention is made of whether the control group is very much like the experimental group, or all members of a group are implied to have nearly identical characteristics that differ from those of other groups.
Scientific Method(124-144)	IN	SCI.8.8.5.7	Recognize and describe the danger of making over-generalizations when inventing a general rule based on a few observations.
Scientific Method(124-144)	IN	SCI.8.8.5.8	Explain how estimates can be based on data from similar conditions in the past or on the assumption that all the possibilities are known.
Scientific Method(124-144)	IN	SCI.8.8.5.10	Explain how the comparison of data from two groups involves comparing both their middles and the spreads.